

CLAIM AMENDMENTS

Please amend claims 27, 30 and 31 as follows, and cancel claim 29:

Claims 1-26 (canceled)

Claim 27 (currently amended): A water heater apparatus, comprising:

a burner;

a primary heat exchanger having an exterior surface exposed to the burner for receiving heat from the burner, and having an inner flow path for flowing water through the heat exchanger, the flow path having a water inlet and a water outlet;

a water supply conduit connected to the water inlet;

a water discharge conduit connected to the water outlet;

a recirculation conduit communicating the water outlet with the water inlet and bypassing the heat exchanger for directing recirculated water from the water inlet outlet to the water outlet inlet so that the recirculated water recirculates through the heat exchanger without having passed through any portion of the water discharge conduit downstream of the recirculation conduit;

a recirculation valve disposed in the recirculation conduit;

a water temperature sensor disposed in one of the inner flow path and the recirculation conduit; and

a controller, operably associated with the temperature sensor and the recirculation valve, for varying a position of the recirculation valve in response to the water temperature sensor, wherein the controller maintains the water temperature at the water inlet to the inner flow path of the heat exchanger at or above a selected

temperature sufficient to prevent condensation of combustion products from the burner on the exterior surface of the heat exchanger.

Claim 28 (original): The apparatus of claim 27, wherein:

the water temperature sensor is located adjacent the water inlet to the inner flow path of the heat exchanger.

Claim 29 (canceled)

Claim 30 (currently amended): The apparatus of claim [[29]]27, wherein the selected temperature is at least 130°F.

Claim 31 (currently amended): A water heater apparatus, comprising: The apparatus of claim 27, further comprising:

- a burner;
- a primary heat exchanger having an exterior surface exposed to the burner for receiving heat from the burner, and having an inner flow path for flowing water through the heat exchanger, the flow path having a water inlet and a water outlet;
- a recirculation conduit communicating the water outlet with the water inlet and bypassing the heat exchanger;
- a recirculation valve disposed in the recirculation conduit;
- a water temperature sensor disposed in one of the inner flow path and the recirculation conduit;

— a controller, operably associated with the temperature sensor and the recirculation valve, for varying a position of the recirculation valve in response to the water temperature sensor;

 a secondary heat exchanger located upstream of the primary heat exchanger so that incoming water flows first through the secondary heat exchanger and then through the primary heat exchanger; and

 a combustion conduit for directing combustion products from the burner and the primary heat exchanger to the secondary heat exchanger, so that water flowing through the secondary heat exchanger is preheated by the combustion products before the water flows into the primary heat exchanger.

Claim 32 (original): The apparatus of claim 31, wherein:

 the secondary heat exchanger is a condensing heat exchanger which allows condensation of the combustion products on the exterior of the secondary heat exchanger.

Claim 33 (original): The apparatus of claim 32, wherein:

 a surface of the secondary heat exchanger exposed to combustion products is coated with a corrosion resistant coating to prevent corrosion resulting from the condensation.

Claims 34-49 (canceled)